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ABSTRACT

This study compared techniques for teaching collaborative writing to English majors in Taiwan, focusing on the effectiveness of computer-mediated (CM) vs. face-to-face (FF) peer response sessions, measured by amount of speech produced by students and the level of participation in discussion. Subjects were 17 university sophomores in a composition course, divided into four writing groups. Peer response sessions for half of the writing assignments were conducted using synchronous discussion on networked computers, and half were conducted using face-to-face interaction. Analysis of transcripts of the sessions revealed that FF sessions were far more efficient in producing speech (2.5 times greater in five-person groups). Level of student participation in the discussion of each writing issue was much lower in the CM context, and it was only infrequently that discussion of a writing issue had full-group participation. In a typical CM discussion episode, only one student spoke, with no one responding. In contrast, a typical FF discussion episode had the participation of three students. Implications for writing instruction are drawn. (MSE)

A Comparison Between Chinese EFL Students' Peer Response Sessions Held on Networked Computers and Those Held in a Face-to-Face Setting

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Abstract

Recently, composition teachers in Taiwan have begun to use interactive computer networks to help students collaborate during the writing process. Even though some L2 studies have examined the effectiveness of using InterChange, a module in a computer program named DIWE which allows synchronous interaction among students, to conduct discussion in L2 language classrooms, none of the studies has looked at how Chinese students perform in peer response sessions held on networked computers by making a comparison with how these students perform in the traditional face-to-face setting. Therefore, this study was carried out in 1996-1997 to answer two research questions: (1) What are the differences between computer-mediated (hereafter referred to as CM) and face-to-face (hereafter referred to as FF) peer response sessions regarding the quantity of speech produced by students? (2) What are the differences between CM and FF peer response sessions regarding the level of student interaction in terms of participation in discussion?

The subjects in this study were 17 EFL sophomores in a composition course for English majors at a university in Taiwan. The students were divided into four writing groups, with four or five members in each. The peer response sessions held for half of the writing assignments were conducted on InterChange, while the other half employed face-to-face interaction. The data consisted of transcripts made of the CM and FF peer response sessions. The results showed that the FF session was far more efficient in producing speech (2.5 times greater in 5-person groups). In addition, the level of student interaction in the discussion of each writing issue was much lower in the CM context, and it was only very infrequently that the discussion of a writing issue enjoyed whole-group participation. This was evidenced by the fact that only 5.1% and 5.7%, respectively, of the writing issues in 3- and 5-person groups in the CM session had input from all group members. In contrast, there were more instances of full participation in the FF session, i.e., 16.0% and 16.2%, respectively, of the writing issues discussed in 4- and 5-person groups in the FF session. In a typical episode of discussion of a writing issue in the CM context, only one student spoke, with no one else responding. In contrast, a typical episode in the FF context had the participation of three students. Clearly, the level of student interaction was higher in the FF context.

Several implications can be drawn from these findings. Due to their limitations, networked computers may not be an ideal vehicle for facilitating discussion in peer response sessions. Computers could perhaps be used occasionally to provide variety in classroom activities or to provide a non-stress environment for students who are shy or overly concerned about their oral language proficiency. Writing teachers should be aware that technology does not always guarantee success in writing classrooms.

Keywords: peer feedback, computer-assisted language learning, computer-mediated communication, written language instruction, EFL

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Background of the Study

Recently, composition teachers in Taiwan have begun to use interactive computer networks to help students collaborate during the writing process. InterChange, a module in a computer program named DIWE (Daedalus Integrated Writing Environment) which allows synchronous interaction among students, has been examined by some L2 studies as to its effectiveness in classroom discussion, but none of these studies has compared the performance of Chinese students in peer response sessions held on networked computers against that held in the traditional face-to-face setting. While sizable amounts of money are being spent on software for writing, teachers should consider carefully whether computer-mediated (hereafter referred to as CM) group discussions are indeed more effective than the traditional ones conducted in the face-to-face (hereafter referred to as FF) situation. Since typing almost always requires more time than speaking, whether peer response sessions held in the CM context can be as efficient as their FF counterpart is an interesting question. In addition, since CM discussions are intended to simulate live discussions, it would be interesting to see what level of student interaction can be achieved on networked computers. Therefore, the research questions for this study are as follows:

1. What are the differences between CM and FF peer response sessions regarding the quantity of speech students produce?
2. What are the differences between CM and FF peer response sessions regarding the level of student interaction in terms of participation in discussion?

Some researchers have proved that students' speech output is larger in CM discussions conducted through InterChange than in traditional classroom oral discussions. In the L2 context, Kern's (1995) study of university students learning French as a foreign language found that in the two classes examined, each student produced an average of 216 to 230 words on the computer vs. an average of 111 to 137 words in oral discussions. However, Sullivan and Pratt's (1996) study of 38 ESL students at a Puerto Rican university who conducted peer response sessions in both the CM and FF contexts produced contrary results: CM discussions produced fewer speaking turns, i.e., between 14 and 25 turns for the four groups studied, than FF discussions, which produced between 40 and 70 turns. The above inconsistency might have been a result of the number of students involved in each discussion: Kern's discussions were conducted by the whole class, while Sullivan and Pratt's were conducted by four-person groups.

In the L2 context, only two researchers have looked into the level at which students interact with one another during CM discussions. Warschauer (1996) studied how 16 students in an advanced ESL college composition class reacted to one another in small-group prewriting discussions in both the CM and FF situations. He claimed that the level of interaction on InterChange was less direct, with students expressing their own ideas as opposed to directly answering questions. CM discussions also had fewer of the important interactive features which were often found in FF discussions, such as questioning, recasting, confirmation checks, and paraphrasing. This study suggested that students did not always use networked computers to "interact" with one another. Rather, they often used the computers

to type out their views for display. Kern's (1995) study also mentioned problems with the discourse produced on networked computers: lack of coherence and continuity of discussion, as reflected by rapid topic shifts and frequent digressions. This study also hinted that the interaction in CM discussions failed to simulate live discussions to a certain extent.

So far, researchers have not investigated how Chinese EFL students perform during peer response sessions held on networked computers in terms of the quantity of discussion and the level of student interaction. Increasing numbers of Chinese students are using networked computers in their writing classes. So far, researchers have not investigated how Chinese EFL students perform during peer response sessions held on networked computers in terms of the quantity of discussion or the level of student interaction.

Methods

The participants were 17 English majors enrolled in a two-semester composition course for sophomores at a university in Taiwan. Before entering the course, all the students had learned word processing in English (Word 6.0). More than half of them had conducted peer response session in the FF context before, but none had conducted them on networked computers. The students were divided into four writing groups, with four or five members in each. During the year, the students wrote seven writing assignments, mostly expositions. After completing first drafts, the students gave them to their group members to read in preparation for peer response sessions. Before the sessions, the students were required to write their comments for peers' writing and suggestions for revision on critique sheets. The sessions for assignments 2, 4, and 6 were mediated through InterChange, while those for assignments 1, 3, 5, and 7 employed face-to-face interaction. Only the sessions held for assignments 6 and 7 were compared in this study. Assignment 6 was an argumentation essay, and assignment 7 a film review.

Results and Discussion

Quantity of Speech Produced in CM and FF Peer response sessions

The quantities of speech produced in the CM and FF sessions are given in Table 1. Peer response sessions 6 and 7 are referred to as PR6 (CM) and PR7 (FF).

Table 1: Quantity of Speech Produced in Peer Response Sessions 6 and 7

	G1	G2	G3	G4
PR6 (CM)				
No. of students	3	3	5	5
Length of discussion (no. of minutes)	56.0	65.0	64.0	68.0
Quantity of speech (no. of words)	1242	1360	2100	2813
Speech production rate (no. of words per minute)	22.2	20.9	32.8	41.4
PR7 (FF)				
No. of students	4	4	4	5
Length of discussion (no. of minutes)	55.7	55.2	31.6	57.0
Quantity of speech (no. of words)	4938	6038	2200	5304
Speech production rate (no. of words per minute)	88.7	109.4	69.6	93.1

Note. G1, G2, G3, G4 = Group 1, 2, 3, 4.

The table shows that the FF session produced far more speech than the CM one. In PR7 (FF), the average rate of speech production was 89.2 words per minute in the three 4-person groups, and 93.1 in the one 5-person group. In contrast, in PR6 (CM), the average rate was only 21.6 in the two 3-person groups, and 37.1 in the two 5-person groups. If groups with the same number of members are compared, in a 5-person group, the FF context produced speech 2.5 times faster than the CM context. The rates shown in the 3- and 4-person groups in the two contexts also suggested a similar tendency. Therefore, as far as the quantity of language production was concerned, the FF context was far more effective.

Level of Student Interaction in Peer Response Sessions

To provide insight into the level of student interaction in peer response sessions, each discussion was divided into episodes, with each one centering around a writing issue, abbreviated as WI. A WI episode covers all the speech devoted to the discussion of a particular writing problem. A WI may focus on a macro-level issue, such as the appropriateness of a writing topic or the overall structure of an essay, or a micro-level one such as the misuse of a word or a grammar point. If the discussion of a certain issue is resumed for a second time some time later in the discussion, these two rounds are considered as one WI episode. In Table 2, the level of student interaction is indicated by the number of students involved in the discussion of each WI.

Table 2: Level of Student Interaction in PR6 (CM) and PR7 (FF)

	PR6 (CM)	PR6 (CM)	PR7 (FF)	PR7 (FF)
	3-person groups (2 groups)	5-person groups (2 groups)	4-person groups (3 groups)	5-person group (1 group)
Total of WIs	39 (100.0%)	53 (99.9%)	81 (99.9%)	37 (99.9%)
No. of WIs with 1 participant	18 (46.2%)	24 (45.2%)	3 (3.7%)	4 (10.8%)
No. of WIs with 2 participants	19 (48.7%)	12 (22.6%)	33 (40.7%)	7 (18.9%)
No. of WIs with 3 participants	2 (5.1%)	12 (22.6%)	32 (39.5%)	11 (29.7%)
No. of WIs with 4 participants	NA	2 (3.8%)	13 (16.0%)	9 (24.3%)
No. of WIs with 5 participants	NA	3 (5.7%)	NA	6 (16.2%)

Note. 3-P, 4-P, 5-P=3-person, 4-person, 5-person.

The study showed that student participation was much lower in the CM context, and it was only very infrequently that a discussion of a WI enjoyed whole-group participation. This was evidenced by the fact that, respectively, only 5.1% and 5.7% of the WIs in 3- and 5-person groups in the CM session had input from all members. In a typical episode of discussion in the CM context, only one student talked, with no one else responding. On the other hand, there were more instances of full participation in the FF session, i.e., 16.0% and

16.2%, respectively, of the WIs in 4- and 5-person groups. A typical episode in both a 4- and 5-person group in the FF context had three participants. Clearly, the level of interaction in the FF session was better. This means that there was a higher possibility for the quality of an FF discussion to be superior, because there was a greater chance for ideas expressed by a student to be expanded, supported, or refuted by other students, which was essential for any brainstorming session.

The many instances of WIs in the CM session in which there was only one participant seemed to suggest that often the students used the computer as a recorder for creating an idea bank for display to other students, and they did so by faithfully typing the comments they had recorded on their critique sheets into the computer. Since typing was time-consuming, a large proportion of the session time was sheerly devoted to typing. Thus, the students did not often had the chance to respond to what other students said. On the other hand, in the FF session, since the students could talk much faster than they could type, they had more time to interact with one another. Another reason for the low level of interaction on the computer might be the discoursal incoherence produced on the computer. Since there was a time gap between seeing a group member's comment on the screen and typing out a response, the conversation produced on the computer often lacked coherence. Such a lack might have made it difficult for the students to interact with one another effectively.

The level of group interaction in each WI episode could be considered as an indication of the quality of the discussion: the more group members joined the discussion, the more likely that a richer pool of ideas would be created, and thus better quality could be achieved. It appeared that the context of discussion did make a difference in interaction pattern, and also the quality of discussion.

Conclusions and Implications

The results showed that students produced much less speech during a peer response session conducted on networked computers than one conducted in the FF setting. The students' slow typing speed made the former a less desirable context for conducting discussions. In addition, the degree of student interaction in terms of participation in discussion seemed to be poorer on the computer. Due to these grave limitations, networked computers should not be used to conduct peer response sessions too often. They could be used once in a while to provide variety in classroom activities or to provide a non-stress environment for students who are shy or overly concerned about their oral language proficiency. However, if a peer response session is to be conducted on the computer, students need to be encouraged to participate in the discussion of every writing issue. The leader of each group could be instructed to elicit comments from quiet members constantly. Above all, writing teachers should be aware that the use of technology in writing classrooms does not always guarantee success.

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